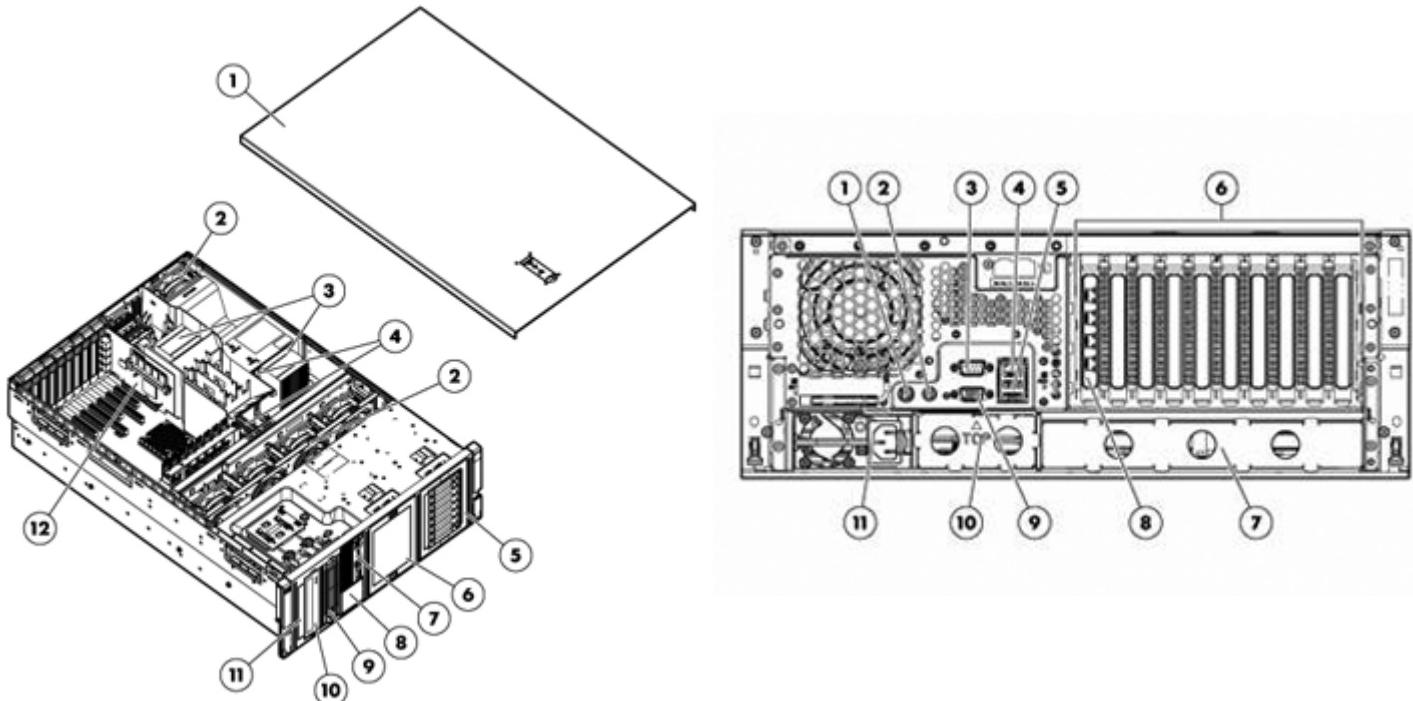


Overview

The next generation of the HP ProLiant ML370 (expandable tower chassis) and the new HP ProLiant DL370 (4U rack optimized chassis) deliver Industry-leading management tools, leading performance, expandability, flexibility and the latest energy efficient technologies. These servers are well-suited for deployment in growing businesses, remote office sites, or datacenters and have been designed to bring you (our customer) the utmost confidence to run your business.

HP ProLiant DL370 G6 (Rack)



Front View:

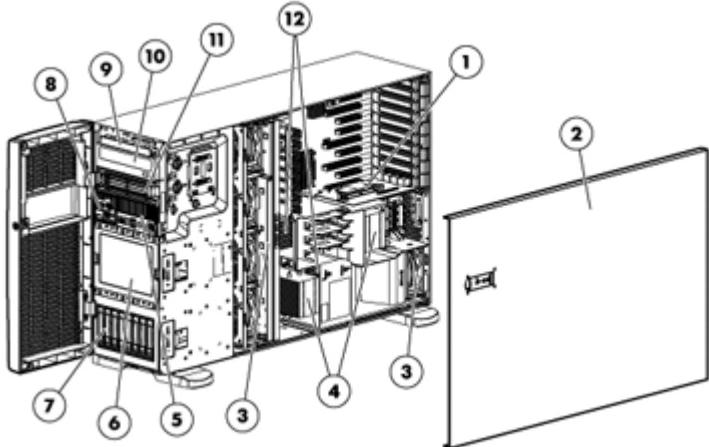
1. Quick removal access panel
2. Three Hot-plug fans (standard) Five (optional)
3. Intel Six or Quad-Core Processor (Performance model includes two processors)
4. Eighteen slots for DDR3 Registered or Unbuffered Memory
5. SAS/SATA drive cage
6. Optional drive cage bay
7. Power on/standby button, video connector and two USB connectors
8. System Insight Display
9. Removal media bay
10. DVD-ROM drive
11. Optional slimline optical drive bay
12. 9 Available PCI-Express Gen2 slots; PCI-X (optional)

Rear View:

1. Mouse connector
2. Keyboard connector
3. Serial connector
4. iLO 2 connector
5. Two USB connectors
6. 9 Available PCI-Express Gen2 expansion slots; PCI-X (optional)
7. PCI-X Expansion slot riser bay
8. Four NIC connectors
9. Video connector
10. Power supply bay 2
11. Power supply bay 1 (populated)

Overview

HP ProLiant ML370 G6 (Tower)

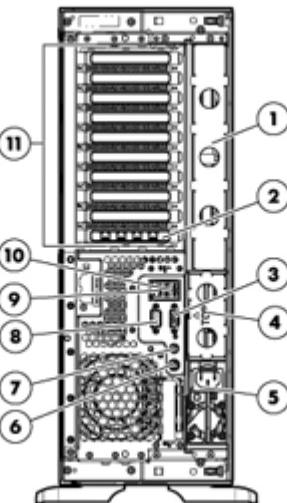


Front View:

1. 9 Available PCI-Express Gen2 slots; PCI-X (optional)
2. Quick removal access panel - Tool-less access to all system components for easy in rack serviceability
3. Three Hot-plug fans (standard) Five (optional)
4. Intel Six or Quad-Core Processor (Performance model includes two processors)
5. Power on/standby button
6. Optional drive cage bay
7. SAS/SATA drive cage
8. System Insight Display for quick and easy server diagnostics
9. Optional slimline optical drive bay
10. DVD-ROM drive
11. Removal media bay
12. Eighteen slots for DDR3 Registered or Unbuffered Memory

Rear View:

1. PCI-X Expansion slot riser bay
2. Four NIC connectors
3. Video connector
4. Power supply bay 2
5. Power supply bay 1 (populated)
6. Mouse connector
7. Keyboard connector
8. Serial connector
9. iLO 2 connector
10. Two USB connectors
11. 9 Available PCI-Express Gen2 expansion slots; PCI-X (optional)



What's New

- Intel® Xeon® processor 5600 series-the next generation of intelligent server processors - offering significant performance (up to 40% over single-core processors), security (TXT Ready - Note: TXT will function only with the Intel® Xeon® processor 5600 series) and power regulation (Low Voltage DIMMs) enhancements
- HP 4GB (1x4GB) Single Rank x4 PC3L-10600 and 8GB (1x8GB) Dual Rank x4 PC3L-10600R-9 (DDR3-1333) Registered CAS-9 Low Voltage DIMMs (Note: These DIMMs operate at a lower voltage and only with the Intel® Xeon® processor 5600 series)
- HP 450GB and 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise Hard Drives

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor

One of the following depending on Model

Six-Core Processors

Intel® Xeon® Processor X5680 (3.33 GHz, 12MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/1/1/2/2)

Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)

Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)

Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)

Quad-Core Processors

Intel® Xeon® Processor X5677 (3.46 GHz, 12MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/2/2/3/3)

Intel® Xeon® Processor X5667 (3.06 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)

Intel® Xeon® Processor E5640 (2.66 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5630 (2.53 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor W5580 (3.20 GHz, 8MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/1/2)

Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)

Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)

Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)

Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)

Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)

Intel® Xeon® Processor L5630 (2.13 GHz, 12ML L3 Cache, 40W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)

Dual-Core Processors

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800)

NOTE: Up to 2 processors supported. Performance configurations include two processors. Mixing different processor models is not supported.

NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology.

NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4, 3, 2, and 1 cores active.

NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

NOTE: For the Intel 5600 and 5500 Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

Standard Features

Cache Memory 12MB (1 x 12MB) Level 3 cache

One of the following depending on Model 8MB (1 x 8MB) Level 3 cache

4MB (1 x 4MB) Level 3 cache

NOTE: Cache size is dependent on processor.

Chipset Intel® 5520 chipset

NOTE: For more information regarding Intel chipsets, please see the following URL:
<http://www.intel.com/products/server/chipsets/>.

Upgradeability Upgradeable to two processors

Memory Protection Advanced ECC

Mirroring mode

Lockstep mode

Online Spare mode

Memory Type DDR3 Registered (RDIMM) or Unbuffered (UDIMM)

One of the following depending on Model Standard (Performance Models) 12GB (6 x 2GB) RDIMM

Standard (Base Models) 6GB (3 x 2GB) RDIMM

Standard (Entry Model) 4GB (2 x 2GB) RDIMM

Maximum (RDIMM) 192GB (12 x 16GB) for Registered Memory configurations

Maximum (UDIMM) 48GB (12 x 4GB) for Unbuffered Memory configurations

NOTE: If only one processor is installed, only half the DIMM slots are available.

NOTE: when populating with the 16GB Memory Kits (Quad-Rank), only 12 DIMMs can be populated.

NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1333MHz, 1066MHz, or 800MHz. Please see the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.

Network Controller HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter

Standard Features

Expansion Slots

NOTE: Nine (9) available PCI-Express Gen2 expansion slots to provide you with the latest I/O performance; PCI-X (optional).

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
1	PCIe	x4	x8	Half length, full height	
2	PCIe2	x4	x8	Full Length/Full Height	
3	PCIe2	x16	x16	Full Length/Full Height	
4	PCIe2	x4	x8	Full Length/Full Height	
5	PCIe2	x4	x8	Full Length/Full Height	
6	PCIe2	x8	x16	Full Length/Full Height	
7	PCIe2	x4	x8	Full Length/Full Height	
8	PCIe2	x16	x16	Full Length/Full Height	
9	PCIe2	x4	x8	Full Length/Full Height	
10	PCIe2	X8	X8	Half length, full height	Utilized by NIC controller "Use the correct model number for the NIC"
11	PCI-X	See note	See note	Full Length/Full Height	(optional) *Up to 64bits/133Mhz speed when only one device install in slot 11 and 12 *up to 64bits/100Mhz speed when both slot 11 and 12 are utilized.
12	PCI-X	See note	See note	Full Length/Full Height	(optional)

*Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

*PCI-X support is limited to PCI-X cards only

Standard Features

Storage Controller One of the following depending on Model	Entry Models	HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0) NOTE: Entry Models available for ML370 G6 models only.
	Base Models	HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
	Performance Models (487790-001 and 576411-001 Models)	HP Smart Array P410i/512 MB BBWC Controller (RAID 0/1/1+0/5/5+0/6)
	Performance Model (595166-001 Model)	HP Smart Array P410i/1G FBWC Controller (RAID 0/1/1+0/5/5+0/6)
Available upgrades: 256MB, 512MB with BBWC, 512MB with FBWC, 1G with FBWC, Battery kit upgrade (for the 256MB cache), and Smart Array Advanced Pack (SAAP).		
Internal Storage Devices	Diskette Drive	None Standard
	Optical Drive	SATA DVD ROM (standard in all models)
	Hard Drives	None Standard
	Hard Drive Bays	(8) SFF SAS/SATA Hard Drive Bays Standard Up to (24) SFF SAS/SATA with optional drive cages (up to three 8 SFF drive cage can be installed)
NOTE: Two open half-height media bays available for tape drives, optical media, optional SAS HDD cage.		
Maximum Internal Storage	Hot Plug SFF SAS	14.4TB
	Hot Plug LFF SAS	28TB
NOTE: Up to 24 small form factor (SFF) or 14 large form factor (LFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives.		
Interfaces	Serial	1 (rear)
	Video	1 (+1 front video on rack models)
	Network RJ-45 (Ethernet)	4 (rear)
	ILO 2.0 remote management port	1
	Keyboard	1
	Pointing Device (Mouse)	1
	SD slot	1
	USB 2.0 Ports	5 (2 on the rear, 2 on the front, 1 internal) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html
	Dedicated USB 2.0 Port	1 (available for DAT USB tape connectivity) NOTE: Internal USB ports are optimal for the attachment of HP DAT USB Internal Tape Drives

Standard Features

Industry Standard Compliance	ACPI V2.0 Compliant PCI-Express Gen2 PXE Support WOL Support Microsoft® Logo certifications USB 2.0 Support SMBIOS 2.6.1
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Server Power Cords

High voltage power cord ships standard with all part numbers.

NOTE: ProLiant DL servers no longer ship standard with NEMA power cords (187335-001) that allow connection to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the above NEMA power cord must be ordered separately.

Common Slot Power Supplies

The Common Slot (CS) Power Supply provides the customer with commonality in power supplies across multiple platforms to save on the cost of spares and allows HP to offer multiple power solutions to fit the customers' needs. Many HP ProLiant Servers come with or are compatible with high-efficiency HP CS Power Supplies. These power supplies are designed to provide high-efficiency power without degrading performance of the ProLiant server. All HP Common Slot power supplies are hot-plug and meet the requirements for UL and CE Mark Compliance.

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs.

HP's ProLiant Common Slot Power supplies (460W & 750W) meet multiple Energy Efficiency Initiatives including Climate Savers Computing Initiative (CSCI) GOLD and ECOS Consulting/80PLUS GOLD certifications.

The HP 1200W CS Power Supply meets multiple Energy Efficiency Initiatives including CSCI Silver and ECOS Consulting/80PLUS Silver certifications.

Redundant Power: Optional (1 + 1 redundant) power supplies can be purchased through power supply option kits (see Redundant Options for part numbers).

System Fans

(3) Hot Plug fans ship standard

NOTE: For full redundancy you can purchase the HP ML370 G6 and DL370 G6 Redundant Fan Kit; PN: 508107-B21.

Standard Features

Operating Systems and Virtualization Software Support for ProLiant Servers

Microsoft Windows Server
Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)
Oracle Enterprise Linux (OEL)
Solaris
VMware
HP Citrix Essentials for XenServer

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: <http://www.hp.com/go/ossupport> and our driver download page <http://www.hp.com/support/ML370G6>.

Required Cabling

For external storage cabling information, refer to the Web site at: www.hp.com/servers/dl370 or www.hp.com/servers/ml370.

Graphics

Integrated ATI RN50, 64 MB video standard

- 16 bit color: maximum resolution of 1600 x 1200
- 32 bit color: maximum resolution of 1280 x 1024

NOTE: Maximum resolution available via iLO 2 remote console is 1280 x 1024.

Graphics Cards: Supports up to 3 x 300W Graphic Cards via Graphic Card Power Adapter kit.

NOTE: 2 PCIe Gen2 x16 (mechanical/electrical); 1 PCIe Gen2 x16 (mechanical) x8 (electrical)

Form Factor

4U Tower Chassis and 4U Rack Optimized Chassis (7 in, 17.8 cm)

NOTE: Redesigned 4U Tower Chassis and the new 4U Rack Optimized Chassis to better meet our customer's density requirements.

HP Insight Software

HP Insight Foundation

Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.

HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: www.hp.com/go/foundation. The foundation pack includes:

- HP SmartStart
- HP Management DVD
- HP ProLiant Smart Update Firmware DVD

SmartStart version supported (minimum): SmartStart 8.20
<http://www.hp.com/servers/smartsstart>

NOTE: In an effort to support reducing our environmental impact, the HP Insight Foundation Suite for ProLiant media will be available as a selectable



Standard Features

HP Integrated Lights-Out (iLO)	option for this server at time of order of a CTO SKU. This will allow customers to order the number of media kits that best meet their needs and eliminate receiving unnecessary duplicate media.
HP Integrated Lights-Out (iLO)	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO
Security	Power-on password Keyboard password Diskette drive control Diskette boot control QuickLock, Network Server Mode Serial interface control Administrator's password
Warranty	This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html



Optional Features

HP Insight management software

HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console.

Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol

HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>.

HP Insight Dynamics for ProLiant

HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP StorageWorks Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location.

NOTE: For more information, visit: <http://www.hp.com/go/insighthdynamics>

HPC Interconnects

NOTE: High Performance Computing (HPC) interconnect technologies are available for this server under the Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand or Gigabit Ethernet Interconnects: <http://www.hp.com/techservers/clusters/ucp/index.html>

InfiniBand

PCI-Express adapters



Optional Features

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>.

HP Enterprise Configurator

The HP eConfigure Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>

Service and Support

Service and Support

HP Care Pack Services: Packaged server and storage services for increased uptime, productivity and ROI

When you buy HP server and storage products and solutions, it's also a good time to think about what levels of support you may need. Our portfolio of service options reduce deployment and management worries while helping you get the most out of your server and storage investments. We take a holistic approach to your environment, bridging servers, blades, storage, software and network infrastructures with our packaged HP Care Pack Services for servers and storage.

Protect your business beyond warranty

When it comes to robustness and reliability, standard computing equipment warranties have matured along with technology. Good news that can also create problems stemming from depending on standard warranties designed to only protect against product defects and some downtime causes. Using a standard approach to warranty uplifts, such as HP Care Pack Services, helps reduce downtime risks and provides operational consistency for mission-critical and standard business computing.

HP Care Pack Services: Upgrading or extending standard server and storage warranties cost effectively

HP Care Pack Services offer a standard reactive hardware and software support services suite sold separately, or combined with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of integrated proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition with HP Proactive Select, you can acquire the specific proactive constancy and technical services. HP Proactive Select menu offers a broad set of service options that you can mix and match depending on your specific requirements. Proactive service options include offers for server, storage, network, SAN device, software, environment and education services.

HP server and storage lifecycle support services offer a full spectrum of customer care-from technology support to complex migrations to complete managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education Services offer flexible, comprehensive training on to help your IT staff get the most out of your server and storage investments. HP Financial solutions extend innovative financing and cost-effective asset management programs-from purchase to equipment retirement.

Learn more: www.hp.com/services/servers and www.hp.com/services/storage

NOTE: Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at <http://www.hp.com/go/lookuptool>

Service and Support

Recommended HP Care Pack Services for optimal satisfaction with your HP product

Recommended Services

3-Year HP Hardware Support Onsite Call-to-Repair (CTR) Service, 6- or 24-hour

Provides your IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 or 24 hours of the initial service request to the HP Global Solution Center.

HP is committed to repairing your hardware within a maximum of six or twenty four hours. The benefits include:

- Improved system uptime
- Predictable repair times
- More effective IT resource planning
- Consistent level of hardware support across your multi-technology systems

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6636ENN>

3-Year HP Hardware Support Onsite Service, 4-hour response, 24x7

Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.

This service provides a trained HP service specialist to perform an installation that meets HP quality standards, for:

- Help improve or maintain system uptime
- Convenient onsite support
- Committed response time

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE>

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

- Expedited installation, with all service prerequisites met before the installation is performed
- Installation in accordance with manufacturer's specifications, enhancing the supportability of your HP-installed hardware and software
- Service delivery at a mutually scheduled time
- Allows your IT resources to stay focused on their core tasks and priorities
- Availability of an HP service specialist to answer questions during the onsite delivery of this service

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN>



Service and Support

Optional HP Care Pack Services that will enhance your HP product experience

Optional Services

3-Year HP Support Plus 24

As an alternative to our recommended support level, for customers who need access to responsive 24x7 hardware and software support plus software updates on HP and selected third party products:

For a higher return on your server and storage technology, our 3-year combined reactive support service delivers integrated onsite hardware/software support services available 24x7x365, including access to HP technical resources, 4-hour response onsite hardware support and software updates.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EEE>

3-Year HP Proactive 24

As an alternative to our recommended support level, for customers who want enhanced operational effectiveness and proactive problem identification:

Provides improved stability, availability and operational effectiveness with an integrated hardware and software support service that combines industry-leading reactive technical assistance with proactive account services, giving your IT manage support from a team of service specialists.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-1614ENUC>

HP Proactive Select Service

Customer needs on demand access to consulting, technical proactive services and education courses

Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN>

eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal

The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: <http://www.hp.com/support>

HP Insight Remote Support software delivers secure remote support for your HP Servers and Storage, 24



Service and Support

X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur.

Customer Technical Training

In today's cost-conscious business environment, IT professionals, developers, consultants and users face an interesting challenge: how to keep up with the latest technologies and expand important skills while delivering profitable results on current projects. To help address this challenge, HP offers innovative training solutions that help keep you up-to-date on virtualization, server, storage, Insight Control, Citrix, Microsoft® and open source/Linux-related topics-while spending less time away from business-critical activities.

HP Services Awards

HP Technology Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction.

Additional Services Information

To learn more on HP ProLiant servers, HP BladeSystem servers and HP StorageWorks storage products, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: www.hp.com/services/proliant or www.hp.com/services/bladesystem or <http://www.hp.com/hps/storage>



Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.

NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

Base Rack Models

HP ProLiant DL370 G6 E5530 2.40GHz Quad- Core SFF Base Rack Server 487794-001	Processor	(1) Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 cache, 80W, DDR3- 1066, HT, Turbo 1/1/2/2)
	Cache Memory	8MB (1 x 8MB) L3 cache
	Memory	6GB (3 x 2GB) PC3-10600 (DDR3-1333) Registered DIMMs NOTE: Total of 18 DIMM slots.
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)
	Optical Drive	SATA DVD ROM
	Power Supply	(1) HP 750W Common Slot High Efficiency Power Supply Kit (hot plug, redundancy optional)
	Fans	(3) Hot Plug Fans
	Form Factor	4U Rack
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Performance Rack Models

HP ProLiant DL370 G6 X5650 2.66GHz Six-Core SFF High Performance ICE Rack Server 595166-001	Processor	(2) Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 cache, 95W, DDR3-1333, HT)
	Cache Memory	12MB L3 cache
	Memory	12GB (6 x 2GB) PC3-10600 (DDR3-1333) Registered DIMMs NOTE: Total of 18 DIMM slots.
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/1GB with FBWC
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)
	Optical Drive	SATA DVD ROM
	Power Supply	(2) HP 750W Common Slot High Efficiency Power Supply Kits (hot plug, redundant)
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates



Pre-configured Models

	Fans	(5) Fully Redundant Hot Plug Fans
	Form Factor	4U Rack
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response
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HP ProLiant DL370 G6 X5550 2.66GHz Quad- Core SFF High Performance Rack Server 487790-001	Processor	(2) Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)
	Cache Memory	8MB (1 x 8MB) L3 cache
	Memory	12GB (6 x 2GB) PC3-10600 (DDR3-1333) Registered DIMMs NOTE: Total of 18 DIMM slots.
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/512MB with BBWC
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)
	Optical Drive	SATA DVD ROM
	Power Supply	(2) HP 750W Common Slot High Efficiency Power Supply Kits (hot plug, redundant)
	Fans	(5) Fully Redundant Hot Plug Fans
	Form Factor	4U Rack
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response
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HP ProLiant DL370 G6 X5550 2.66GHz Quad- Core SFF Performance ICE Rack Server 576411-001	Processor	(2) Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)
	Cache Memory	8MB (1 x 8MB) L3 cache
	Memory	12GB (6 x 2GB) PC3-10600 (DDR3-1333) Registered DIMMs NOTE: Total of 18 DIMM slots.
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/512MB with BBWC
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)
	Optical Drive	SATA DVD ROM
	PCI-Express Slots	10 slots - (9) available PCI-e Gen2 slots (NOTE: 10 slots available, one is taken by the NIC riser card)
	Power Supply	(2) HP 750W Common Slot High Efficiency Power Supply Kits (hot plug, redundant)
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	Fans	(5) Fully Redundant Hot Plug Fans
	Form Factor	4U Rack
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response



Pre-configured Models

Base Tower Models

HP ProLiant ML370 G6 E5540 2.53GHz Quad- Core SFF Base Tower Server 487791-001	Processor	(1) Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Cache Memory	8MB (1 x 8MB) L3 cache
	Memory	6GB (3 x 2GB) PC3-10600 (DDR3-1333) Registered DIMMs NOTE: Total of 18 DIMM slots.
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)
	Optical Drive	SATA DVD ROM
	Power Supply	(1) HP 750W Common Slot High Efficiency Power Supply Kit (hot plug, redundancy optional)
	Fans	(3) Hot Plug Fans
	Form Factor	4U Tower
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Entry Tower Models

HP ProLiant ML370 G6 E5620 2.40GHz Quad- Core SFF Entry Tower Server 625591-001	Processor	(1) Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	4 GB (2 x 2 GB) PC3-10600 (DDR3-1333) Registered DIMMs NOTE: Total of 18 DIMM slots.
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)
	Optical Drive	SATA DVD ROM
	Power Supply	(1) HP 460W HE 12V Hot Plug AC Power Supply Kit (hot plug, redundancy optional)
	Fans	(3) Hot Plug Fans
	Form Factor	4U Tower
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

HP ProLiant ML370 G6 E5520 2.26GHz Quad- Core SFF Entry Tower	Processor	(1) Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Cache Memory	8MB (1 x 8MB) L3 cache



Pre-configured Models

Server 487795-001	Memory	4 GB (2 x 2 GB) PC3-10600 (DDR3-1333) Registered DIMMs NOTE: Total of 18 DIMM slots.
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)
	Optical Drive	SATA DVD ROM
	Power Supply	(1) HP 460W HE 12V Hot Plug AC Power Supply Kit (hot plug, redundancy optional)
	Fans	(3) Hot Plug Fans
	Form Factor	4U Tower
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response



Smart Buys

The ProLiant Smart Buy program offers a collection of promotional server and option products that are configured with SMB in mind, offered at discounted prices, and positioned for quick delivery. Smart Buy server offers are available for a limited time only.

S-Buy ML370G6 E5530 6GB SFF 519578-005	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Form Factor	(1) Intel® Xeon® Processor E5530 (2.40 GHz, 80 Watts, DDR3-1066) 8MB Level 3 cache 6 GB (3x 2GB 2Rx8 PC3-10600R-9 Kit) NC375i Integrated Quad Port Multifunction Gigabit Server Adapter Smart Array P410i/512MB BBWC None included Up to 8 SFF standard, up to 24 SFF with 2 additional drive cages none included (2) HP 750-Watt CS HE Power Supply Kit 3 standard Hot Plug fans, 5 total Hot Plug fans supported (with addition of Redundant Fan Kit) 4U Tower
S-Buy DL370G6 E5540 8GB SFF 519577-005	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Form Factor	(2) Intel® Xeon® Processor E5540 (2.53 GHz, 80 Watts, DDR3-1066) 8MB Level 3 cache 8 GB (2x 4GB 2Rx4 PC3-10600R-9 Kit) NC375i Integrated Quad Port Multifunction Gigabit Server Adapter Smart Array P410i/512MB BBWC None included Up to 8 SFF standard, up to 24 SFF with 2 additional drive cages none included (2) HP 750-Watt CS HE Power Supply Kit (5) Fully Redundant Hot Plug Fans (3 standard + Redundant Fan Kit) 4U Rack

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.

NOTE: FIO indicates that this option is only available as a factory installable option.

Step 1: Base Configuration (choose one of the following configurable models)

HP Models

HP ProLiant ML370 G6 Tower Models

HP ProLiant ML370 G6 SFF CTO Chassis

483880-B21

NOTE: Supports Small Form Factor (SFF) - 2.5" Drives

Factory Integrated Model ships with:

HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
Integrated Lights-Out embedded

HP Smart Array P410i/Zero Memory Controller

(8) Hot-Plug (SFF) SAS/SATA Drive Bays

(9) available PCI-e Gen2 slots

(5) USB ports

(3) Hot Plug Fans

Tower Form Factor

HP ProLiant ML370 G6 LFF CTO Chassis

483879-B21

NOTE: Supports Large Form Factor (LFF) - 3.5" Drives

Factory Integrated Model ships with:

HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
Integrated Lights-Out embedded

HP Smart Array P410i/Zero Memory Controller

(6) Hot-Plug (LFF) SAS/SATA Drive Bays

(9) available PCI-e Gen2 slots

(5) USB ports

(3) Hot Plug Fans

Tower Form Factor

HP ProLiant DL370 G6 Rack Models

HP ProLiant DL370 G6 SFF CTO Chassis

483874-B21

NOTE: Supports Small Form Factor (SFF) - 2.5" Drives

Factory Integrated Model ships with:

HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
Integrated Lights-Out embedded

HP Smart Array P410i/Zero Memory Controller

(8) Hot-Plug (SFF) SAS/SATA Drive Bays

(9) available PCI-e Gen2 slots

(5) USB ports

(3) Hot Plug Fans

4U Rack Form Factor

HP ProLiant DL370 G6 LFF CTO Chassis

483873-B21

NOTE: Supports Large Form Factor (LFF) - 3.5" Drives

Factory Integrated Model ships with:

HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
Integrated Lights-Out embedded

HP Smart Array P410i/Zero Memory Controller



Configuration Information - Factory Integrated Models

- (6) Hot-Plug (LFF) SAS/SATA Drive Bays
- (9) available PCI-e Gen2 slots
- (5) USB ports
- (3) Hot Plug Fans
- 4U Rack Form Factor

Step 2: Choose Required Options (only one of the following from each list)

HP Processors

NOTE: If High Performance Model features are desired, 2nd processor is included in the Performance Pack part numbers in Step 3 below.

Six-Core Processors

HP ML/DL370 G6 Intel® Xeon® X5680 (3.33GHz/6-core/12MB/130W) FIO Processor Kit 601320-L21

HP ML/DL370 G6 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) FIO Processor Kit 601321-L21

HP ML/DL370 G6 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) FIO Processor Kit 601322-L21

HP ML/DL370 G6 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) FIO Processor Kit 601323-L21

Quad-Core Processors

HP ML/DL370 G6 Intel® Xeon® X5677 (3.46GHz/4-core/12MB/130W) FIO Processor Kit 626957-L21

HP ML/DL370 G6 Intel® Xeon® X5667 (3.06 GHz/4-core/95W/12MB) FIO Processor Kit 631740-L21

HP ML/DL370 G6 Intel® Xeon® E5640 (2.66GHz/4-core/12MB/80W) FIO Processor Kit 601324-L21

HP ML/DL370 G6 Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W) FIO Processor Kit 601325-L21

HP ML/DL370 G6 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) FIO Processor Kit 601326-L21

Intel® Xeon® W5580 3.20GHz Quad Core 130 Watts ML/DL370 G6 Factory Integrated Processor Option Kit 495928-L21

Intel® Xeon® X5570 2.93GHz Quad Core 95 Watts ML/DL370 G6 Factory Integrated Processor Option Kit 495930-L21

Intel® Xeon® X5560 2.80GHz Quad Core 95 Watts ML/DL370 G6 Factory Integrated Processor Option Kit 495932-L21

Intel® Xeon® X5550 2.66GHz Quad Core 95 Watts ML/DL370 G6 Factory Integrated Processor Option Kit 495934-L21

Intel® Xeon® E5540 2.53GHz Quad Core 80 Watts ML/DL370 G6 Factory Integrated Processor Option Kit 495936-L21

Intel® Xeon® E5530 2.40GHz Quad Core 80 Watts ML/DL370 G6 Factory Integrated Processor Option Kit 495938-L21

Intel® Xeon® E5520 2.26GHz Quad Core 80 Watts ML/DL370 G6 Factory Integrated Processor Option Kit 495940-L21

Intel® Xeon® E5506 2.13GHz Quad Core 80 Watts ML/DL370 G6 Factory Integrated Processor Option Kit 495942-L21



Configuration Information - Factory Integrated Models

	Intel® Xeon® E5504 2.0GHz Quad Core 80 Watts ML/DL370 G6 Factory Integrated Processor Option Kit	495944-L21
	HP ML/DL370 G6 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) FIO Processor Kit	601328-L21
	Intel® Xeon® L5520 2.26GHz Quad Core 60 Watts ML/DL370 G6 Factory Integrated Processor Option Kit	505511-L21
	Dual-Core Processors	
	Intel® Xeon® E5502 1.86GHz Dual Core 80 Watts ML/DL370 G6 Factory Integrated Processor Option Kit	495946-L21
HP Memory	Registered DIMMs (RDIMMs)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 4GB (1x4GB) Quad Rank x8 PC3-8500 (DDR3-1066) Registered CAS-7 Low Power Memory Kit	500660-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
	NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	
	HP 8GB (1x8GB) Dual Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	516423-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
	NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator .	
	NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient	
	NOTE: PC3L is a low voltage memory.	
HP Power Supplies	NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server	



Configuration Information - Factory Integrated Models

configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.

HP 460W HE 12V Hot Plug AC Power Supply Kit	503296-B21
HP 750W Common Slot High Efficiency Power Supply Kit	512327-B21
HP 1200W 12V Hot Plug AC Power Supply	500172-B21

NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.

Step 3: Choose Additional Factory Integratable Options

HP Storage Controllers

NOTE: If Additional Memory Cache Module or Controller is desired, please pick one of the following FIO options or go to the Additional Options section of this QuickSpec to find additional HP Storage Controllers:

HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller	491191-B21
HP Smart Array P410/256 2-ports Int PCIe x8 FIO SAS Controller	491195-B21
HP Smart Array P411/256 2-ports Ext PCIe x8 FIO SAS Controller	491193-B21

NOTE: This optional FIO upgrade is supported on the Smart Array P410i Controller only. To find additional optional cache upgrades, go the Additional Options section of this QuickSpec.

HP 256MB Factory Integrated P-Series Cache Module	534108-B21
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HP Performance Packs

Performance Packs are necessary to configure a HP ProLiant DL370 G6 or a HP ProLiant ML370 G6 to a High Performance Model which includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The Performance Pack includes a 2nd processor, redundant fans, power supply, and memory expansion board.

NOTE: Must also select 447326-B21 to achieve parity to DL370 G6 or ML370 G6 High Performance Models (Including the DL370 G6 Performance Model with ICE).

HP ML370 G6 X5650 HPM FIO Perf Kit	605555-B21
HP ML370 G6 and DL370 G6 X5550 HPM FIO Perf Kit	516727-B21

HP Insight Software

HP Insight Control suite, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates

HP Insight Control for Linux, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	TC203A
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Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.



Core Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Unique Options	(8) Small Form Factor (SFF) 2nd Drive Cage Kit	507803-B21
	(6) Large Form Factor (LFF) Backplane Kit	507810-B21
	(2) Large Form Factor (LFF) Drive Cage Kit	487936-B21
	HP ML370 G6 Tower to Rack Conversion Kit	515031-B21
	HP ML370 G6 and DL370 G6 Redundant Fan Kit	508107-B21
	HP ML370 G6 and DL 370 G6 Graphic Card Adapter Kit NOTE: An option kit will be required per Graphic Card NOTE: 2 PCIe Gen2 x16 (mechanical/electrical); 1 PCIe Gen2 x16 (mechanical) x8 (electrical)	537721-B21
	HP ML370 G6 and DL370 G6 PCI-X Riser Kit NOTE: Customers purchasing the PCI-X Riser Kit, must also purchase the Redundant Fan kit (508107-B21) NOTE: PCI-X support is limited to PCI-X cards only	516434-B21

HP Processors

Six-Core Processors

HP ML/DL370 G6 Intel® Xeon® X5680 (3.33GHz/6-core/12MB/130W) Processor Kit	601320-B21
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HP ML/DL370 G6 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) Processor Kit	601321-B21
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HP ML/DL370 G6 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) Processor Kit	601322-B21
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HP ML/DL370 G6 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) Processor Kit	601323-B21
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Quad-Core Processors

HP ML/DL370 G6 Intel® Xeon® X5677 (3.46GHz/4-core/12MB/130W/) Processor Kit	626957-B21
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HP ML370/DL370 G6 Intel® Xeon® X5667 (3.06GHz/4-core/12MB/95W) Processor Kit	631740-B21
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HP ML/DL370 G6 Intel® Xeon® E5640 (2.66GHz/4-core/12MB/80W) Processor Kit	601324-B21
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HP ML/DL370 G6 Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W) Processor Kit	601325-B21
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HP ML/DL370 G6 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) Processor Kit	601326-B21
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HP ML/DL370 G6 Intel® Xeon® W5580 (3.20GHz/4-core/8MB/130W) Processor Kit	495928-B21
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HP ML/DL370 G6 Intel® Xeon® X5570 (2.93GHz/4-core/8MB/95W) Processor Kit	495930-B21
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HP ML/DL370 G6 Intel® Xeon® X5560 (2.80GHz/4-core/8MB/95W) Processor Kit	495932-B21
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HP ML/DL370 G6 Intel® Xeon® X5550 (2.66GHz/4-core/8MB/95W) Processor Kit	495934-B21
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HP ML/DL370 G6 Intel® Xeon® E5540 (2.53GHz/4-core/8MB/80W) Processor Kit	495936-B21
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HP ML/DL370 G6 Intel® Xeon® E5530 (2.40GHz/4-core/8MB/80W) Processor Kit	495938-B21
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HP ML/DL370 G6 Intel® Xeon® E5520 (2.26GHz/4-core/8MB/80W) Processor Kit	495940-B21
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HP ML/DL370 G6 Intel® Xeon® E5506 (2.13GHz/4-core/4MB/80W) Processor Kit	495942-B21
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HP ML/DL370 G6 Intel® Xeon® E5504 (2.00GHz/4-core/4MB/80W) Processor Kit	495944-B21
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HP ML/DL370 G6 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) Processor Kit	601328-B21
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HP ML/DL370 G6 Intel® Xeon® L5520 (2.26GHz/4-core/8MB/60W) Processor Kit	505511-B21
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Dual-Core Processors



Core Options

HP ML/DL370 G6 Intel® Xeon® E5502 (1.86GHz/2-core/4MB/80W) Processor Kit	495946-B21
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HP Memory

Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
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HP S-Buy 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-S21
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HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
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HP S-Buy 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-S21
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HP 4GB (1x4GB) Quad Rank x8 PC3-8500 (DDR3-1066) Registered CAS-7 Low Power Memory Kit	500660-B21
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HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
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HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
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NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 8GB (1x8GB) Dual Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	516423-B21
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HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
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HP S-Buy 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-S21
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HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
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NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
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HP S-Buy 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-S21
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Unbuffered with ECC DIMMs (UDIMMs)	
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HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
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HP S-Buy 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-S21
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HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
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HP S-Buy 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-S21
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HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
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Core Options

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient

HP Drive Cage Options	(8) Small Form Factor (SFF) 2nd Drive Cage Kit	507803-B21
	(6) Large Form Factor (LFF) Backplane Kit	507810-B21
	(2) Large Form Factor (LFF) Drive Cage Kit	487936-B21
HP Optical Drives	HP Half-Height SATA DVD-ROM Optical Drive	447326-B21
	HP Half-Height SATA DVD-RW Optical Drive	447328-B21
	HP Slim SATA DVD-ROM Optical Drive	481041-B21
	HP Slim SATA DVD RW Optical Drive	481043-B21
HP Hard Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
	HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive S-Buy	507127-S21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive S-Buy	512547-S21
	HP 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507125-B21
	HP 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive S-Buy	507125-S21
	HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512545-B21
	SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
	HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516828-B21



Core Options

HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 516816-B21

HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 516814-B21

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive 507610-B21

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive 507616-B21

HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive 507614-B21

HP 750GB 3G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive 461135-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.html

SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive 507750-B21

HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive S-Buy 507750-S21

HP 160GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive 530888-B21

SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive 507632-B21

HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive 454146-B21

HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive S-Buy 454146-S21

HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive 458928-B21

SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives

HP 250GB 3G SATA 5.4K rpm SFF (2.5-inch) Entry 1yr Warranty Hard Drive 460355-B21

HP 120GB 1.5G SATA 5.4K rpm SFF (2.5-inch) Entry 1yr Warranty Hard Drive 458924-B21

SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive 571230-B21

HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive 458945-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/13021_na/13021_na.html

SATA Hot Plug Midline (MDL) Solid State Drives

HP 60GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive 572071-B21

HP 120GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive 572073-B21

SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

HP 60GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive 570761-B21

HP 120GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive 570763-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/13415_na/13415_na.html



Core Options

HP Networking	Gigabit Ethernet adapters HP NC112T PCIe Gigabit Server Adapter HP NC360T PCI Express Dual Port Gigabit Server Adapter HP NC364T PCI Express Quad Port Gigabit Server Adapter NOTE: There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapters allowed in this server. HP NC365T 4-port Ethernet Server Adapter HP NC373F PCI Express Multifunction Gigabit Server Adapter HP NC373T PCI Express Multifunction Gigabit Server Adapter HP NC375T PCI Express Quad Port Gigabit Server Adapter HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	503746-B21 412648-B21 435508-B21 593722-B21 394793-B21 394791-B21 538696-B21 458492-B21
	10 Gigabit Ethernet adapters NOTE: No more than two 10GbE I/O devices are supported in a single ProLiant server. NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.	
	HP NC522SFP Dual Port 10GbE Gigabit Server Adapter HP NC524SFP Dual Port 10GbE Server Adapter HP NC550SFP Dual Port 10GbE Server Adapter	468332-B21 489892-B21 581201-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs .	
	Smart-mini DIMM Module HP 512MB DDR2 244P Mini DIMM Module Kit NOTE: By plugging the Smart-mini DIMM Module to the HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter, TCP/IP Offload Engine (TOE) for Windows is enabled/supported.	519808-B21
HP InfiniBand	HP IB 4X DDR PCI-e DUAL PORT 0 mem HCA 483513-B21 QLogic 4X QDR IB PCI-e G2 HCA HP IB 4X DDR CX-2 PCI-e G2 Dual Port HCA HP IB 4X QDR CX-2 PCI-e G2 Dual Port HCA	516434-B21 583211-B21 592521-B21 592520-B21
HP I/O Expansion Options	HP DL370 G6 2 Slot PCI-X Riser Kit NOTE: Customers purchasing the PCI-X Riser Kit, must also purchase the Redundant Fan kit (508107-B21) NOTE: PCI-X support is limited to PCI-X cards only	516434-B21

Core Options

HP Power Supplies

NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.

HP 460W HE 12V Hot Plug AC Power Supply Kit	503296-B21
HP 750W Common Slot High Efficiency Power Supply Kit	512327-B21
HP 1200W 12V Hot Plug AC Power Supply	500172-B21

NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.

HP Cooling Options

HP ML370 G6 and DL370 G6 Redundant Fan Kit	508107-B21
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Additional Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Software

HP Insight Control

HP Insight Control, Single-Server License including 1 year of 24x7 Technical Support and Updates 452148-B22

HP Smart Buy Insight Control, Single-Server License including 1 year of 24x7 Technical Support and Updates 452148-S22

HP Insight Control suite, No Media, Electronic License including 1 year of 24x7 Technical Support and Updates T9074BAE

HP Smart Buy Insight Control suite, No Media, Electronic License including 1 year of 24x7 Technical Support and Updates T9074ASE

HP Insight Control, Electronic License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates TC278AAE

HP Insight Control, Tracking License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates TC275A

HP Insight Software Media Kit 436222-B21

NOTE: Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.

NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.

NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: <http://www.hp.com/go/insightupdates>.

NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html

HP Insight Control for Linux

HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic TC213AAE

HP Smart Buy Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic TC213ASE

HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates TC209A

HP Insight Control for Linux, Media pack (DVD) - No licenses included TC208A

NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately.

NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: <http://www.hp.com/go/ic-linux> (click on Download button).

NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys.



Additional Options

NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/13019_na/13019_na.html

HP Integrated Lights-Out (iLO) Advanced

HP Integrated Lights-Out Advanced, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 512485-B21

HP ProLiant Essentials Integrated Lights-Out Advanced Pack, Electronic, including 1 year of 24x7 Technical Support and Updates TA850AAE

NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service

NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.html

HP Insight Control server deployment

HP Insight Control server deployment Electronic License including 1 year 24x7 Technical Support and Updates T9082AAE

HP Insight Control server deployment 1-Server License including 1 year 24x7 Technical Support and Updates 452151-B21

NOTE: Licenses ship without media. The Insight Control Media Kit can be ordered separately, or can be downloaded at: <http://www.hp.com/go/insightupdates>.

NOTE: Electronic licenses can be used to purchase multiple licenses with a single activation key.

NOTE: Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.

NOTE: For additional license kits please see the Insight Control QuickSpecs at:
http://h18004.www1.hp.com/products/quickspecs/12631_na/12631_na.html

HP Drive Cage Options	(8) Small Form Factor (SFF) 2nd Drive Cage Kit	507803-B21
	(6) Large Form Factor (LFF) Backplane Kit	507810-B21
	(2) Large Form Factor (LFF) Drive Cage Kit	487936-B21

HP Graphic Options	HP ML370 G6 and DL370 G6 Graphic Card Cable Kit	537721-B21
	NOTE: An option kit will be required per Graphic Card.	

NOTE: 2 PCIe Gen2 x16 (mechanical/electrical); 1 PCIe Gen2 x16 (mechanical) x8 (electrical)

Additional Options

HP I/O Accelerator Options	HP 160GB SLC PCIe ioDrive NOTE: A low-profile PCI bracket is included for use in low-profile slots. HP 320GB MLC PCIe ioDrive NOTE: A low-profile PCI bracket is included for use in low-profile slots. HP 320GB SLC PCIe ioDrive Duo HP 640GB MLC PCIe ioDrive Duo NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_na/13587_na.html	600278-B21 600279-B21 600281-B21 600282-B21
HP Security - TPM	HP Trusted Platform Module Option Kit NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM . NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment. NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or loosing the key could result in data loss.	488069-B21
HP Storage Controllers	SAS Controllers Smart Array P800 Controller HP Smart Array P800/512 BBWC 2-ports Int/2-ports Ext PCIe x8 SAS Controller HP Smart Array P212 Controller HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller HP Smart Array P410 Controller HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller HP Smart Array P411 Controller HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller Smart Array P812 Controller HP Smart Array P812/1G FBWC 2-ports Int/4-ports Ext PCIe x8 SAS Controller	381513-B21 462828-B21 462834-B21 462862-B21 462864-B21 578230-B21 572532-B21 462830-B21 462832-B21 578229-B21 572531-B21 487204-B21



Additional Options

Optional Upgrades

NOTE: These Optional Upgrades are Supported on the Smart Array P410i Controller only.

HP 256MB P-series Cache Upgrade	462968-B21
HP 512MB P-Series Battery Backed Write Cache Upgrade	462967-B21
HP 512MB Flash Backed Write Cache	534916-B21
HP 1GB Flash Backed Cache	534562-B21
HP 8484 to Mini SAS 33in Cable Assembly	591734-B21

NOTE: Cable for use connecting the Smart Array P800 Controller to internal hard disk drives on select HP ProLiant G6 Servers.

HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License	516471-B21
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NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.html
(Smart Array P800 Controller)

http://h18000.www1.hp.com/products/quickspecs/13203_na/13203_na.html
(Smart Array P212 Controller)

http://h18000.www1.hp.com/products/quickspecs/13201_na/13201_na.html
(Smart Array P410 Controller)

http://h18000.www1.hp.com/products/quickspecs/13202_na/13202_na.html
(Smart Array P411 Controller)

http://h18000.www1.hp.com/products/quickspecs/13558_na/13558_na.html
(Smart Array P812 Controller)

SAS Controller Options

HP 24 Bay 3Gb SAS Expander Card	468406-B21
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NOTE: For use with the additional 8 SFF drive cage (507803-B21).

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18004.www1.hp.com/products/quickspecs/13232_na/13232_na.html
(SAS Expander Card)

SAS HBA

HP SC08Ge 2-ports Ext PCIe x8 SAS Host Bus Adapter	488765-B21
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HP Modular Smart Array SC08e 2-ports Ext PCIe x8 SAS Host Bus Adapter	614988-B21
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NOTE: This is a 2 x4 External Port HBA

NOTE: This is only approved for the HP StorageWorks P2000 G3 SAS Modular Smart Array.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18004.www1.hp.com/products/quickspecs/13082_na/13082_na.html
(SC08Ge HBA)

http://h18004.www1.hp.com/products/quickspecs/13651_na/13651_na.html
(SC08e 6Gb HBA)



Additional Options

HP Power Cords	NOTE: HP ProLiant servers ships with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). Nema 5-15P to IEC320-C13, low voltage (6 ft/2 m)	AF556A
HP Backup & Recovery Software	HP Data Protector Express HP Data Protector Express 5.0 for 1 Server HP Data Protector Express 5.0 for 3 Servers HP Data Protector Express 5.0 for 10 Servers HP Data Protector Express 5.0 for 1 Server Upgrade from HP Data Protector Express Basic NOTE: One of these Data Protector Express base products is required. To see available options: http://www.hp.com/go/dataprotectorexpress	TC330AAE TC331AAE TC332AAE TC333AAE
HP Tape Backup	 NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape . For hardware and software compatibility of HP StorageWorks tape backup products see: http://www.hp.com/go/connect . DAT 160 USB Internal Tape Drive HP StorageWorks DAT 160 SAS Internal Tape Drive NOTE: For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server. Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended. HP StorageWorks LTO-5 Ultrium 3000 SAS External Tape Drive NOTE: Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended. HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended. HP StorageWorks DAT 320 USB Internal Tape Drive HP StorageWorks DAT 320 SAS Internal Tape Drive NOTE: Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended. HP StorageWorks Ultrium 448 SAS Internal HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive NOTE: Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended. HP StorageWorks LTO-4 Ultrium 1760 SAS Internal Tape Drive NOTE: Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended. HP StorageWorks LTO-4 Ultrium 1840 SAS External WW Drive NOTE: Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended.	Q1580A Q1587A EH958A AK377A AJ825A AJ830A DW085A EH847A EH919A EH861A



Additional Options

HP StorageWorks LTO-5 Ultrium 3280 Internal Tape Drive	EH899A
NOTE: For installation into 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended.	
HP StorageWorks LTO-5 Ultrium 3000 SAS Internal Tape Drive	EH957A
NOTE: Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended.	
HP StorageWorks 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader	BL536A
NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended.	
HP StorageWorks MSL2024 Tape Library with one LTO-5 Ultrium 3000 SAS Drive	BL537A
NOTE: Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended.	
HP MSL2024 1 LTO-4 Ultr 1760 SAS Library	AK378A
HP StorageWorks MSL4048 Tape Library with one LTO-5 Ultrium 3000 SAS Drive	BL538A
NOTE: Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended.	
HP MSL4048 2 LTO-4 Ultr 1760 SAS Library	AK380A

HP Disk Backup

NOTE: For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d . For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx . For hardware and software compatibility of HP StorageWorks disk backup products see: http://www.hp.com/go/connect .	
HP StorageWorks D2D Backup Systems with Backup Data Deduplication	
HP StorageWorks D2D2502i Backup System	EJ001B
NOTE: 1.5TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
HP StorageWorks D2D2504i Backup System	EJ002B
NOTE: 3.0TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
HP StorageWorks D2D4112fc Backup System	EH993B
NOTE: 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric.	
HP StorageWorks RDX Removable Disk Backup Systems USB	
HP StorageWorks RDX160 Internal Removable Disk Backup System	AJ765A
HP StorageWorks RDX320 Internal Removable Disk Backup System	AJ767A
NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 320GB of disk capacity per data cartridge.	
HP StorageWorks RDX500 Internal Removable Disk Backup System	AJ934A
NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.	



Additional Options

HP StorageWorks RDX750 Internal Removable Disk Backup System	AW577A
NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 750GB of disk capacity per data cartridge.	
HP StorageWorks RDX 1TB Internal Removable Disk Backup System	BV847A
NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 1 TB of disk capacity per data cartridge.	

HP StorageWorks Options

StorageWorks Fibre Channel HBAs

NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see:
<http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

Brocade Fibre Channel HBAs

HP StorageWorks 81B PCI-e FC HBA Single Port	AP769A
HP StorageWorks 82B PCI-e FC HBA Dual Port	AP770A
HP StorageWorks 41B 4Gb PCI-e FC HBA	AP767A
HP StorageWorks 42B 4Gb Dual-Port PCI-e FC HBA	AP768A

Emulex Fibre Channel HBAs

HP StorageWorks 81E PCI-e FC HBA Single Port	AJ762A
HP StorageWorks 82E PCI-e FC HBA Dual Port	AJ763A
HP StorageWorks FC2142 4Gb PCI-e HBA	A8002A
HP StorageWorks FC2242 Dual Channel 4Gb PCI-e HBA	A8003A

QLogic Fibre Channel HBAs

HP StorageWorks 81Q PCI-e FC HBA Single Port	AK344A
HP StorageWorks 82Q PCI-e FC HBA Dual Port	AJ764A
HP StorageWorks FC1142 4Gb PCI-e HBA	AE311A
HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA	AE312A

StorageWorks Converged Network Adapter

HP CN1000E 2P Converged Network Adapter	AW520A
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Additional Options

HP Disk Storage Systems	MSA SAN Storage Arrays	
	HP StorageWorks 60 Modular Smart Array	418408-B21
	NOTE: Supports 12 SFF drives, and SAS 3 Gb/s and SATA 3 Gb/s.	
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12627_na/12627_na.html	
	HP StorageWorks 70 Modular Smart Array	418800-B21
	NOTE: Supports 25 SFF drives, and SAS 3 Gb/s and SATA 3 Gb/s.	
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12652_na/12652_na.html	
	Disk Enclosures	
	HP StorageWorks D2600 Disk Enclosure	AJ940A
	HP StorageWorks D2700 Disk Enclosure	AJ941A
	NOTE: Please see the QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/13404_na/13404_na.html	

HP Uninterruptible Power Systems	HP Tower UPS	
	HP T1000 G3 UPS Models	
	HP T1000 G3 UPS	AF448A
	HP T1500 G3 UPS Models	
	HP T1500 G3 UPS	AF450A
	HP T1500 G3 NA UPS S-Buy	AF450S
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13160_na/13160_na.html	
	HP Rack-mountable UPS	
	HP R1500 G2 UPS	
	HP, R1.5kVA UPS, 1U	AF419A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12507_na/12507_na.html	
	NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups .	
	NOTE: For additional information on sizing your server, please reference: http://www.upssizer.com .	
	Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords .	

Additional Options

HP Power Distribution Units	HP Monitored Power Distribution Unit: Half Rack Version HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12118_na/12118_na.html Modular Power Distribution Units 1U/0U (Up to 32 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks). HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) 8.3kVA Model - mPDU, 40A, High (power cord attached) HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.html NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu . Please see the UPS and PDU cable matrices on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords .	AF914A
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HP Rack Series	HP Rack 10000 G2 Series (Carbon/Graphite Metallic) 10642 G2 (42U) Rack Cabinet - Pallet 10642 G2 (42U) Rack Cabinet - Shock Pallet HP 10642G2 1200mm deep Rack cabinet Shock Rack HP 10647G2 1200mm deep Rack cabinet Shock Rack NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.html NOTE: For additional information regarding Rack Cabinets and Telco Rack support, please see the following URL: http://www.hp.com/go/rackandpower . NOTE: The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without	AF001A AF002A AF092A AF094A
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Additional Options

blanking panels results in improper cooling that can lead to thermal damage.

NOTE: Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

HP Rack Options

Keyboards and Monitors

HP TFT7600 G2 KVM Console Rackmount Keyboard Monitor

AZ870A

HP TFT7600 G2 KVM Console Rackmount Keyboard TAA Monitor

AZ885A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/13731_na/13731_na.html

TFT7600 Rackmount Keyboard Monitor

AG052A

HP TAA TFT7600 Rkmntkybd 17in Monitor

AG067A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/12417_na/12417_na.html

1U Rackmount Keyboard with USB

AG072A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/12465_na/12465_na.html

HP Server Console Switches

HP Server console switch 0x2x8

AF616A

HP Server console switch 0x2x16

AF617A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/11834_na/11834_na.html

HP Server Console Switch G2 with Virtual Media & CAC

0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC

AF618A

0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC

AF619A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/13475_na/13475_na.html

HP IP Console Switch G2 with Virtual Media & CAC

1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC

AF620A

2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC

AF621A

4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC

AF622A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/13474_na/13474_na.html

Rack Kits

HP ML370G6 Tower to Rack Conversion Kit

515031-B21



Additional Options

HP USB and SD Options	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP Standard USB Keyboard	DT528A#ABA
	HP 4GB SD Flash Media Kit	580387-B21
	NOTE: Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization .	
	HP 2GB USB Flash Media Key	608447-B21
	NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	

HP Care Pack Services	HP ProLiant ML370 G6 Service & Support Offerings	
	Hardware Services On-site Service	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4528E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4529E
	Hardware Services 6-Hour Call to Repair On-site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4530E
	Installation & Start-up Services	
	Hardware Installation, Electronic	U4538E
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4539E
	Support Plus	
	Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4540E
	Support Plus 24	
	Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4541E
	Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U6311E
	HP ProLiant DL370 G6 Service & Support Offerings	
	Hardware Services On-site Service	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UM752E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UM753E
	Hardware Services 6-Hour Call to Repair On-site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UM754E
	Installation & Start-up Services	
	Support Plus 24	
	Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	UM763E



Additional Options

Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite,
onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic

UM764E

NOTE: For more information, customer/resellers can contact:
<http://www.hp.com/services/carepack>.

Smart Buy Care Packs

HP ProLiant ML370 G6 Service & Support Offerings

S-Buy 4-Hour Onsite Response, 13-Hour x 5-Day Coverage, 3 years

UE903E

S-Buy 4-Hour Onsite Response, 24-Hour x 7-Day Coverage, 3 years

UE904E

S-Buy 6-Hour Call to Repair, 24-Hour x 7-Day Coverage, 3 years

UM362E

HP ProLiant DL370 G6 Service & Support Offerings

S-Buy 4-Hour Onsite Response, 13-Hour x 5-Day Coverage, 3 years

UQ465E

S-Buy 4-Hour Onsite Response, 24-Hour x 7-Day Coverage, 3 years

UQ466E

S-Buy 6-Hour Call to Repair, 24-Hour x 7-Day Coverage, 3 years

UQ467E

NOTE: Smart Buy Care Packs can only be attached to Smart Buy SKUs

Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

HP ProLiant DL370 G6 Models

HP ProLiant ML370 G6 Models

DDR3 memory population guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:
www.hp.com/go/ddr3memory-configurator

Some DIMM installation guidelines are summarized below:

- For servers with eighteen (18) memory slots:
 - There are three (3) channels per processor; six (6) channels per server
 - There are three (3) DIMM slots for each memory channel; eighteen (18) total slots
 - Memory channel 1 consists of the three (3) DIMMs that are closest to the processor
 - Memory channel 3 consists of the three (3) DIMMs that are furthest from the processor
- DIMM slots that are white should be populated first
- Do not mix Unbuffered memory (UDIMMs) with Registered memory (RDIMMs)
- Do not install DIMMs if the corresponding processor is not installed
- If only one processor is installed in a 2CPU system, only half of the DIMM slots are available
- To maximize performance, balance the total memory capacity between all installed processors
- It is not required, but it is recommended to load the channels similarly if possible
- If any Quad rank DIMMs are installed, all channels are limited to only 2 DIMMs per channel.
- You can only install two quad-rank DIMMs per channel
- You can only install two UDIMMs per channel; if available, the third slot in the channel must remain empty
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel
- Heaviest load (DIMM with most ranks) within a channel goes furthest from the chipset
- For memory mirroring mode, channel 3 must be unpopulated. Channels 1 and 2 are populated identically
- For lock-step mode, channel 3 must be unpopulated. DIMMs in channels 1 and 2 will be installed in pairs. The paired slots will be 1,4; 2,5; 3,6 on a 3DPC system or 1,4; 2,5; on a 2DPC system
- Low Voltage DIMMs can only be used with the Intel® Xeon® processors 5600 series
- If mixing DIMM voltage is a requirement, please note that the DIMMs will run at 1.5V since all 1.35V are capable of supporting 1.5V operations

DIMM slot/capacity/populated speed table

DIMM Type	Registered DIMMS (RDIMMs)						Unbuffered with ECC DIMMs (UDIMMs)			
	Single Rank (1R)	Dual Rank (2R)			Quad Rank (4R)		Single Rank (1R)	Dual Rank (2R)		
DIMM Capacity	4G	2GB	4GB	8GB	8GB	4GB	16GB	1GB	2GB	4GB
DIMM Native Speed (MHz)	1333	1333	1333	1066	1333	1066	1066	1333	1333	1333
Voltage	LV/Reg	Reg	Reg	Reg	LV/Reg	Reg	Reg	Reg	Reg	Reg
SLOTS THAT CAN BE POPULATED										
18 slot servers	18	18	18	18	18	12	12	12	12	12
MAXIMUM CAPACITY (GB)										
	72	36	72	144	144	48	192	12	24	48
POPULATED DIMM SPEED (MHz)										



Memory

1 DIMM Per Channel	1333	1333	1333	1066	1333	1066	1066	1333	1333	1333
2 DIMM Per Channel	1333*	1333*	1333*	1066	1333*	800	800	1066	1066	1066
3 DIMM Per Channel	800	800	800	800	800	n/a	n/a	n/a	n/a	n/a

* Supported with ROM update via ROM Based Setup Utility (RBSU)

NOTES:

- PC3-10600 DIMMs have a maximum speed of 1333MHz. PC3-8500 DIMMs have a maximum speed of 1066MHz
- Mixing DIMM speeds is allowed, but the system processor speed rules always override the DIMM capabilities
- If you do mix DIMM speeds, the memory bus will default to the minimum clock rate of all DIMMs in the system - even if the slower DIMM is on the other processor
- If you install 1x 1066MHz DIMM in channel 1 and 1x 1333MHz DIMM in channel 2, the maximum speed will be 1066MHz
- If you install 1x 1066MHz DIMM in channel 1 and 5x 1333MHz DIMMs with 1 DIMM Per Channel (DPC) in each of the other channels, the maximum speed will be 1066MHz
- If you install 3DPC in one channel (if applicable) and 1DPC in all other channels, you run at 800MHz
- Maximum memory speed will also depend on the processor
- References to the above MHz speeds are for the various speeds of DDR3 DIMMs; 1333 refers to DDR3-1333, etc.

DIMM slot and configuration diagrams

Basic memory slot & population diagram

- Population order; start with "A" first, "B" second, "C" third, etc.

18 DIMM SLOTS (9 per CPU node)					
	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G	1	G	Chnl 1
	2	D	2	D	
	3	A	3	A	
Chnl 2	4	H	4	H	Chnl 2
	5	E	5	E	
	6	B	6	B	
Chnl 3	7	I	7	I	Chnl 3
	8	F	8	F	
	9	C	9	C	

Standard memory configuration (1 CPU model)

- 6GB, consisting of three (3) 2GB dual-rank PC3-10600 RDIMMs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; empty	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; empty	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; empty	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

Standard memory plus optional memory (1 CPU model)

- 54GB, consisting of three (3) 2GB RDIMMs plus six (6) 8GB RDIMMs
 - 3x 2GB dual-rank PC3-10600 RDIMMs
 - 6x 8GB dual-rank PC3-10600 or PC3-8500 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; 8GB DIMM	1	G; empty	Chnl 1
	2	D; 8GB DIMM	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; 8GB DIMM	4	H; empty	Chnl 2
	5	E; 8GB DIMM	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; 8GB DIMM	7	I; empty	Chnl 3
	8	F; 8GB DIMM	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

Standard memory replaced with optional memory (1 CPU model)

RDIMM maximum configuration

- 72GB, consisting of nine (9) 8GB dual-rank PC3-10600 or PC3-8500 RDIMMs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; 8GB DIMM	1	G; empty	Chnl 1
	2	D; 8GB DIMM	2	D; empty	
	3	A; 8GB DIMM	3	A; empty	
<hr/>					
Chnl 2	4	H; 8GB DIMM	4	H; empty	Chnl 2
	5	E; 8GB DIMM	5	E; empty	
	6	B; 8GB DIMM	6	B; empty	
<hr/>					
Chnl 3	7	I; 8GB DIMM	7	I; empty	Chnl 3
	8	F; 8GB DIMM	8	F; empty	
	9	C; 8GB DIMM	9	C; empty	

UDIMM maximum configuration (1 CPU model)

- 24GB, consisting of six (6) 4GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 4GB DIMM	2	D; empty	
	3	A; 4GB DIMM	3	A; empty	
<hr/>					
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 4GB DIMM	5	E; empty	
	6	B; 4GB DIMM	6	B; empty	
<hr/>					
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 4GB DIMM	8	F; empty	
	9	C; 4GB DIMM	9	C; empty	

Standard memory replaced with optional memory (2 CPU model)

RDIMM maximum configuration

- 192GB, consisting of twelve (12) 16GB Quad-Rank PC3-8500 RDIMMs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 16GB DIMM	2	D; 16GB DIMM	
	3	A; 16GB DIMM	3	A; 16GB DIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 16GB DIMM	5	E; 16GB DIMM	
	6	B; 16GB DIMM	6	B; 16GB DIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 16GB DIMM	8	F; 16GB DIMM	
	9	C; 16GB DIMM	9	C; 16GB DIMM	

UDIMM maximum configuration (2 CPU model)

- 48GB, consisting of twelve (12) 4GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 4GB DIMM	2	D; 4GB DIMM	
	3	A; 4GB DIMM	3	A; 4GB DIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 4GB DIMM	5	E; 4GB DIMM	
	6	B; 4GB DIMM	6	B; 4GB DIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 4GB DIMM	8	F; 4GB DIMM	
	9	C; 4GB DIMM	9	C; 4GB DIMM	

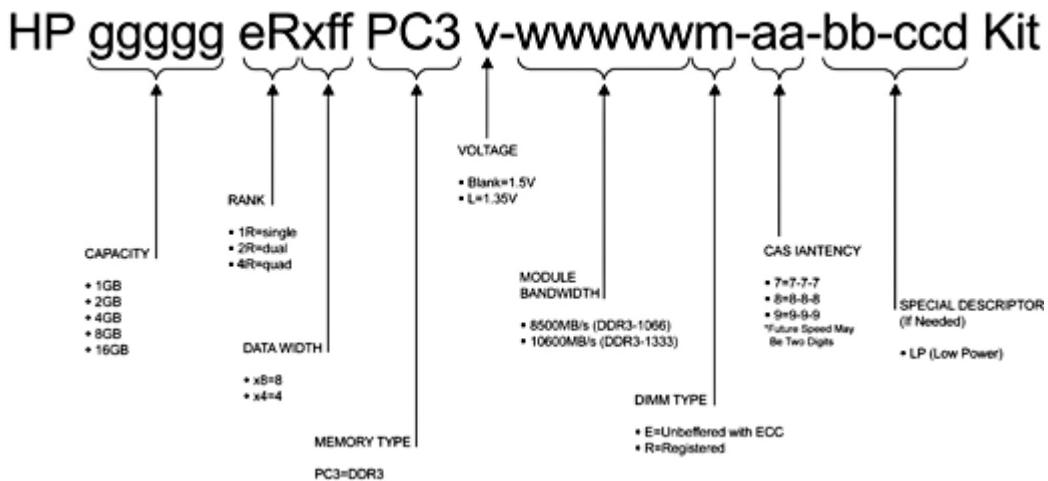
NOTE: Capacity references are rounded to the common Gigabyte values.

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB

[DDR3 memory options part number decoder](#)



Memory



Following are memory options available from HP:

HP Memory

Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
HP 4GB (1x4GB) Quad Rank x8 PC3-8500 (DDR3-1066) Registered CAS-7 Low Power Memory Kit	500660-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21

NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 8GB (1x8GB) Dual Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	516423-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21

NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
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Unbuffered with ECC DIMMs (UDIMMs)

HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21



Memory

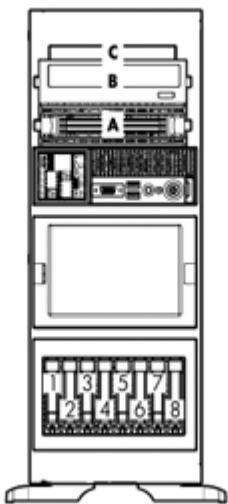
NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.

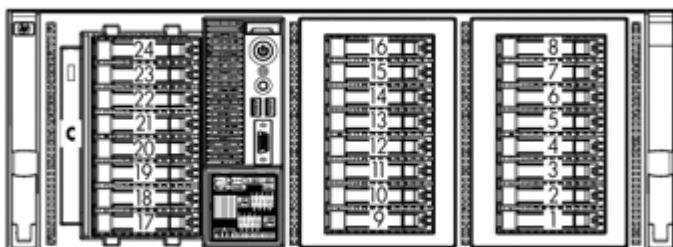
Storage



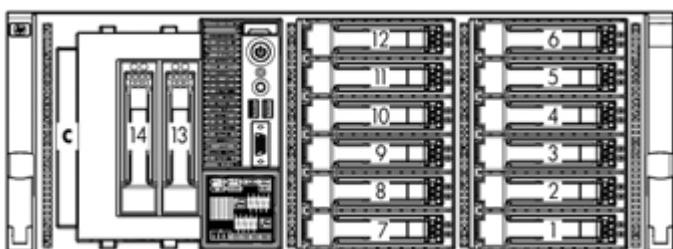
- A Removable media bay
- B SATA DVD-ROM Drive (Standard in all BTO Models)
- C Optical Drive (blank)
- 1-8 Eight SFF SAS/SATA HDD Bays (Standard in all BTO Models)



- A Removable media bay
- B SATA DVD-ROM Drive (Standard in all BTO Models)
- C Optical Drive (blank)
- 1-8 Eight SFF SAS/SATA HDD Bays (Standard in all BTO Models)



- 1-24 Twenty-four small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives with optional drive cages (up to three 8 SFF drive cage can be installed)



- 1-14 Fourteen large form factor (LFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives with optional drive cages

Storage

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
Half-Height SATA DVD-ROM Optical Drive	Up to 2	A, B	Integrated IDE
Half-Height SATA DVD RW Optical Drive	Up to 2	A, B	Integrated IDE
HP Slim SATA DVD-ROM Optical Drive	1 <i>NOTE: Also please use if the 3 drive cage is populated</i>	C	Integrated IDE
HP Slim SATA DVD RW Optical Drive	1 <i>NOTE: Also please use if the 3 drive cage is populated</i>	C	Integrated IDE

Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 10K DP	Up to 24	1-8	HP Smart Array P800/512 BBWC Controller
450GB 6G SAS 10K DP		1-24	HP Smart Array P212/Zero Memory Controller
300GB 6G SAS 10K DP			HP Smart Array P212/ 256 MB Controller
146GB 6G SAS 15K DP			HP Smart Array P410/256 MB Controller
146GB 6G SAS 10K DP			HP Smart Array P410/512 MB BBWC Controller
72GB 6G SAS 15K DP			HP Smart Array P410/512 MB FBWC Controller
			HP Smart Array P410/1G FBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/512 MB FBWC Controller
			HP Smart Array P411/1G FBWC Controller
			HP Smart Array P812/1G FBWC Controller

SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K DP	Up to 14	1-14	HP Smart Array P800/512 BBWC Controller
450GB 6G SAS 15K DP			HP Smart Array P212/Zero Memory Controller



Storage

300GB 6G SAS 15K DP

HP Smart Array P212/ 256 MB Controller
HP Smart Array P410/256 MB Controller
HP Smart Array P410/512 MB BBWC Controller
HP Smart Array P410/512 MB FBWC Controller
HP Smart Array P410/1G FBWC Controller
HP Smart Array P411/256 MB Controller
HP Smart Array P411/512 MB BBWC Controller
HP Smart Array P411/512 MB FBWC Controller
HP Smart Array P411/1G FBWC Controller
HP Smart Array P812/1G FBWC Controller

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 7.2K DP	Up to 14	1-14	HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G FBWC Controller

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
HP 2TB 6G SAS 7.2K	Up to 14	1-14	HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G FBWC Controller
HP 1TB 6G SAS 7.2K			
750GB 3G SAS 7.2K DP			

SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
500GB 3G SATA 7.2K	Up to 24	1-8	HP Smart Array P800/512 BBWC Controller
160GB 3G SATA 7.2K		1-24	HP Smart Array P212/Zero Memory Controller



Storage

HP Smart Array P212/ 256 MB Controller
HP Smart Array P410/256 MB Controller
HP Smart Array P410/512 MB BBWC Controller
HP Smart Array P410/512 MB FBWC Controller
HP Smart Array P410/1G FBWC Controller
HP Smart Array P411/256 MB Controller
HP Smart Array P411/512 MB BBWC Controller
HP Smart Array P411/512 MB FBWC Controller
HP Smart Array P411/1G FBWC Controller
HP Smart Array P812/1G FBWC Controller

SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K	Up to 14	1-14	HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G FBWC Controller
1TB 3G SATA 7.2K			
500GB 3G SATA 7.2K			

SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K	Up to 24	1-8	HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G FBWC Controller
120GB 1.5G SATA 5.4K		1-24	

SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K	Up to 14	1-14	HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller
160GB 3G SATA 7.2K			



Storage

HP Smart Array P212/ 256 MB Controller
HP Smart Array P410/256 MB Controller
HP Smart Array P410/512 MB BBWC Controller
HP Smart Array P410/512 MB FBWC Controller
HP Smart Array P410/1G FBWC Controller
HP Smart Array P411/256 MB Controller
HP Smart Array P411/512 MB BBWC Controller
HP Smart Array P411/512 MB FBWC Controller
HP Smart Array P411/1G FBWC Controller
HP Smart Array P812/1G FBWC Controller

SATA Hot Plug Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD	Up to 24	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G FBWC Controller
120GB 3.0G SATA SSD		1-24	

SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD	Up to 14	1-14	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G FBWC Controller
120GB 3.0G SATA SSD			

Storage

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
60 Modular Smart Array	Up to 4	External	HP Smart Array P212/256 MB Controller
	Up to 8		HP Smart Array P800/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller
70 Modular Smart Array	Up to 2	External	HP Smart Array P212/256 MB Controller
	Up to 4		HP Smart Array P800/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller
D2600 Disk Enclosure	Up to 4	External	HP Smart Array P212/256 MB Controller
	Up to 8		HP Smart Array P800/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller
D2700 Disk Enclosure	Up to 2	External	HP Smart Array P212/256 MB Controller
	Up to 4		HP Smart Array P800/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

Tape and Disk Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media, including the internal fitting models, see: <http://www.hp.com/go/tape>. For the complete range of StorageWorks D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of StorageWorks RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP StorageWorks disk and tape backup products see: <http://www.hp.com/go/connect>.

	Position Supported	Controller	Part Number
HP StorageWorks SCSI Tape Drives	Internal or External	HP U320e SCSI Dual Channel Controller	AH627A

LTO-1 Ultrium 232
LTO-2 Ultrium 448
LTO-3 Ultrium 920



Storage

LTO-3 Ultrium 960
LTO4 Ultrium 1760
LTO-4 Ultrium 1840
DAT 40
DAT 72
DAT 160

NOTE: Please check the full compatibility information at:
<http://www.hp.com/go/connect>

HP StorageWorks USB Tape Drives	Internal or External	USB 2.0 Port	N/A
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DAT 40			
DAT 72			
DAT 160			
DAT 320			

HP StorageWorks USB Rack Mount Kits	External	USB 2.0 Port	USB 2.0 Port
1U USB Rack-Mount Kit			

HP StorageWorks SAS Tape Drives	Internal or External	HP P212 SAS Smart Array Controller	462828-B21
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DAT 160			
DAT 320			
LTO-2 Ultrium 448			
LTO-3 Ultrium 920			
LTO-4 Ultrium 1760			
LTO-4 Ultrium 1840			
LTO-5 Ultrium 3000			
LTO-5 Ultrium 3280			

NOTE: Please check the full compatibility information at:
<http://www.hp.com/go/connect>

HP StorageWorks SAS Rack Mount Kits	External	HP P212 SAS Smart Array Controller	462828-B21
1U Rack-Mount Kit			
3U Rack-Mount Kit			

NOTE: Please check the full compatibility information at:
<http://www.hp.com/go/connect>

HP StorageWorks SCSI Tape Autoloaders	External	HP U320e SCSI Dual Channel Controller	AH627A
DAT 72x10 Autoloader			
1/8 G2 Autoloader			

NOTE: Please check the full compatibility information at:
<http://www.hp.com/go/connect>

HP StorageWorks SCSI Tape Libraries	External	HP U320e SCSI Dual Channel Controller	AH627A
MSL2024			
MSL4048			
MSL8096			
MSL6000			

NOTE: Please check the full compatibility information at:
<http://www.hp.com/go/connect>

HP StorageWorks SAS Tape Autoloaders and	External	HP P212 SAS Smart Array Controller	462828-B21
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Storage

Libraries

1/8 G2 Autoloader
MSL2024
MSL4048
MSL8096

NOTE: Please check the full compatibility information at:
<http://www.hp.com/go/connect>

HP StorageWorks Fibre
Channel Tape Libraries
MSL2024
MSL4048
MSL8096
MSL6000

External Please consult the EBS connectivity matrix at:
<http://www.hp.com/go/ebs> for connectivity information and the
supported Fibre Channel HBAs shown in this QuickSpecs.

HP StorageWorks USB
RDX Removable Disk
Backup System
RDX160
RDX320
RDX500
RDX750
RDX1TB

Internal or
External USB 2.0 port N/A

HP StorageWorks D2D
Backup Systems, iSCSI
D2D2500i
D2D4000i

External Embedded Network Controller. If the server requires a hardware
iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is
recommended. N/A

HP StorageWorks D2D
Backup Systems, Fibre
Channel
D2D4000fc

External Direct server attach is not supported, requires connection via SAN
fabric. See: <http://www.hp.com/go/connect> N/A

Power Specifications

HP 460W HE 12V Hot Plug AC Power Supply Kit							
Part Number	503296-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.5	4.5	2.6	2.5	2.4	2.3	2.2
Maximum Rated Input Wattage Rating (Watts)	526	520	505	505	503	503	503
Maximum Rated VA (Volt-Amp)	548	542	527	527	524	524	524
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1794	1773	1725	1725	1715	1715	1715

HP 750W Common Slot High Efficiency Power Supply Kit							
Part Number	512327-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.9	7.4	4.3	4.1	3.9	3.7	3.6
Maximum Rated Input Wattage Rating (Watts)	857	847	824	824	820	820	820
Maximum Rated VA (Volt-Amp)	894	884	859	854	854	854	854
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797

Power Specifications

HP 1200W 12V Hot Plug AC Power Supply							
Part Number	500172-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	6.1	5.9
Maximum Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%)	86	87	89	89	89	89	89
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

To review typical system power ratings use the Active Answers HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL370 G6 or ML370 G6
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

Technical Specifications

System Unit	Tower Dimensions (H x W x D) (with bezel)	18.52 x 9.75 x 29.12 in (47.04 x 24.77 x 73..96 cm)
	Rack Dimensions (H x W x D) (with bezel)	6.88 x 19.03 x 27.53 in (17.48 x 48.34 x 69.93 cm)
	Tower Weight (approximate)	Maximum (All hard drives, power supply, and processor installed) Minimum (one hard drive, power supply, and processor installed)
		99.2 lb (45.00 kg) 66.14 lb (30.00 kg)
	Rack Weight (approximate)	Maximum (All hard drives, power supply, and processor installed) Minimum (one hard drive, power supply, and processor installed)
		85.91 lb (38.97 kg) 52.90 lb (24.00 kg)
	Input Requirements (per power supply)	Rated Line Voltage Rated Input Current Rated Input Frequency Rated Input Power
		90 - 132 VAC, 180 - 264 VAC 7.5A (at 100 VAC), 3.8A (at 200 VAC) 47 to 63 Hz 980W (at 100 VAC) 1035W (at 120 VAC) 1170W (at 240 VAC)
	BTU Rating	Maximum Maximum Maximum
		460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC) 750W - 2892 BTU / hr (at 120 VAC), 2797 (at 240 VAC) 1200W - 3530 BTU / hr (at 120 VAC), 4600 (at 240 VAC)
	Power Specifications	To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient - Click on the system of interest. Example: DL370 G6 or ML370 G6 - Follow the instructions of the next screens.
	Power Supply Output (per power supply)	Rated Steady-State Power Maximum Peak Power NOTE: See Power Supply Specifications tables for complete details on 460W PSU and optional 750W and 1200W Power Supply Options.
	System Inlet Temperature	Operating 10° to 35°C (50° to 95°F) at sea level with an



Technical Specifications

Relative Humidity (non-condensing)		
	Non-operating	altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed.
	Operating	System performance may be reduced if operating with a fan fault or above 30°C (86°F).
Altitude		
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
Acoustic Noise		
	Non-operating	10 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Idle	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Emissions Classification (EMC)		
	FCC Rating	4.6 B for 1P Non-Redundant; 4.9 B for 2P Redundant
	Normative Standards	28 dB for 1P Non-Redundant; 31 dB for 2P Redundant
	Operating	4.7 B for 1P Non-Redundant; 5.0 B for 2P Redundant
	L pAm	29 dB for 1P Non-Redundant; 32 dB for 2P Redundant
NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.		



Technical Specifications

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

Smart Array P410i Controller	Dimensions	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal 4X connectors
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus
	Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
	SAS Speed	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC Zero Memory, Up to 2 logical volumes (8 physical drives)
	Logical Drives Supported	Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) NOTE: RAID 6, 6+0 can be enabled with one of the following combinations: <ul style="list-style-type: none">● 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades● 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades● 1G FBWC and Smart Array Advanced Pack License key option upgrades RAID 5, 5+0 (Distributed Data Guarding) NOTE: A minimum of 256 MB cache is required to enable RAID 5, 5+0 support RAID 1+0 (Striping & Mirroring) RAID 0 (Striping), RAID 1 (Mirroring)

Technical Specifications

NC375i Integrated Quad Network Interface Port Multifunction Gigabit Compatibility Server Adapter	10Base-T/100Base-TX/1000Base-TX IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 802.3ad 1000Base-TX IEEE 802.1p 100Base-TX IEEE 802.1q 100Base-TX
Data Transfer Method	PCI Express, four lanes (x4)
Controller	Qlogic/NetXen NX3031
Network Transfer Rate	10Base-T (Half-Duplex) 10 Mb/s 10Base-T (Full-Duplex) 20 Mb/s 100Base-TX (Half-Duplex) 100 Mb/s 100Base-TX (Full-Duplex) 200 Mb/s 1000Base-TX (Half and Full-Duplex) 2000 Mb/s
Connector	RJ-45
Cable Support	10Base-T Categories 3, 4 or 5 UTP up to 328 ft (100 m) 100Base-TX Category 5 or higher UTP; up to 328 ft (100 m) 1000Base-TX Category 5 or higher UTP; up to 328 ft (100 m)

HP Integrated Lights-Out 2 (iLO 2) integrated on system board	Architecture Processor Upgradeability Operating System Support
	32-bit PCI-based health and remote management ASIC 32-bit RISC processor core running at 66MHz Option firmware upgradeable via Flash ROM Microsoft Windows Server 2008 Standard Edition (32bit and 64bit) Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit) Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Extended Systems Standard Edition, Enterprise Edition Red Hat Enterprise Linux 5.4 (32bit and 64bit) SUSE LINUX Enterprise Server 11 (32bit and 64bit) SUSE LINUX Enterprise Server 10 (32bit and 64bit) VMware ESX 4.0 VMware ESX 3.5.0 Microsoft Windows XP Professional Edition Microsoft Windows Vista Business and Ultimate Editions Red Hat Enterprise Linux Desktop 5.00 SUSE Linux Enterprise Desktop 11 SUSE Linux Enterprise Desktop 10 Client Browser Support

Technical Specifications

Command Line Support	Telnet, Secure Shell and serial port access Secure Socket Layer Secure Shell version 2 (Password and certificate)
Security	Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface RC4 encryption of video
Directory Support Services	Active Directory v1.0 (Windows 2003)
Driver Support	Health Driver (HP ProLiant iLO 2 Management Controller Driver) iLO Management Channel Interface Driver
Management protocols supported	SNMP 2, IPMI 2.0 (KCS interface), DMTF Server Management Command Line Protocol Specification (SM CLP), DMTF Web Services Management Specification (WS Management)

Environment-friendly Products and Approach	End-of-life Management and Recycling Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green . To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green . These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.
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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.

